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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,712	04/05/2001	Johann Engelhardt	21295/100	3955

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EXAMINER

NGUYEN, THONG Q

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 03/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,712

Applicant(s)

ENGELHARDT ET AL.

Examiner

Thong Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of invention II, claims 10-18 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the groups of invention as indicated by the Examiner are not independent and distinct. After further review the features recited in the pending claims 1-18, it is noted that the features recited in the group I are directed to the use of a beam-splitter for splitting an incident light beam and two objective lens systems disposed in opposite manner with respect to a specimen. Such features are not patentable with respect to a double confocal microscope having a detecting system. Thus, the restriction requirement is now withdrawn, and all of the pending claims 1-18 are examined in this Office action.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or Declaration. See 37 CFR 1.52(c). In particular, the present Oath/Declaration contains a correction in the section provided the information of the second

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invention; however, there is not an initial and date of the correction.

Drawings

4. The drawings contain two sheets of figures 1-2 filed by applicant on 04/05/2001 have been received by the Office.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: In particular, the numerical reference "33" as shown in each of figures 1 and 2 is not mentioned in the specification.. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature concerning the correction means for compensating the unwanted lateral offset upon axial positioning of the detection pinhole as recited in claim 14 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

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requested in correcting any errors of which applicant may become aware in the specification.

8. The disclosure is objected to because of the following informalities:

The Summary of the Invention is objected to because it is too long and contains numerous details of the invention. The present summary is not considered as the one which complies with the requirements as set forth in 37 CFR. 1.73. See also MPEP 608.01(d). It is suggested that applicant should amend the summary by providing a brief description of the invention, and move other descriptions/details to the section of "DETAILED DESCRIPTION OF THE INVENTION".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

a) Claim 1 is rejected under 35 USC 112, first paragraph because the specification fails to provide sufficient information/description for the arrangement as well as the optical features of the plurality of components disposed in the illuminated light path and/or detecting light path so that the so-called "optical

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properties” of the components and the so-called “accumulated aberrations” with respect to the optical axis and/or the surface of a specimen region are at least of the order of magnitude of the theoretically achievable resolution capability.

b) The remaining claims are dependent upon the rejected base claim and thus inherit the deficiencies thereof.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 1 is rejected under 35 USC 112, second paragraph for the following reasons: First, each of the features “the accumulated aberrations” (line 6); “the optical axis” (line 7); “the specimen region” (lines 7-8); “the order of magnitude” (line 8); and “the theoretically achievable resolution capability” (lines 8-9) lacks a proper antecedent basis; Second, the feature “the optical properties of the components” (line 5) is indefinite. What kind of “optical properties” does applicant imply here? Applicant should note that claim(s) must be analyzed to determine their metes and bounds so that it is clear from the claim language what subject matter the claim encompass. The definiteness of the claim(s) is important to allow others who wish to enter the market place to ascertain the boundaries of protection that are provided by the claim(s); Third, the feature thereof “the optical properties... with one another” (lines 5-6) is indefinite because the claim fails to

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show the type of coordination among the components. In other words, what kind of coordination of the optical properties of the components does applicant imply here? Fourth, the feature thereof “at least of the order of magnitude of the theoretically achievable resolution capability” (lines 8-9) is indefinite. What is “the theoretically achievable resolution capability” does applicant imply here? What is the range does applicant imply from the condition thereof “at least of the order of magnitude of the theoretically achievable resolution capability”? Fifth, the feature thereof “the accumulated aberrations... specimen region” (lines 6-8) is indefinite because it is unclear which component processes the so-called “accumulated aberrations” Does applicant intent to refer to the “plurality of components” or “the specimen region” or other component(s)?

b) Claim 2 is indefinite for the following reasons: First, the feature “the surface in the specimen” (lines 1-2) is indefinite. Applicant should note that the base claim recites at least one surface (see claim 1, line 7); therefore, which surface is “the surface” in claim 2? Second, the feature “the focal plane of the objectives” (lines 2-3) lacks a proper antecedent basis.

c) Claim 3 is rejected under 35 USC 112, second paragraph for the following reasons: First, the feature “the focal plane” (line 3) lacks a proper antecedent basis; and Second, the claim is functional. The claim recites functional language thereof “at least two surfaces...are defined” (lines 1-3) without reciting sufficient structure to warrant the presence of functional language. In other words, it is

entirely unclear how the two surfaces in the specimen region arranged symmetrically with respect to a so-called "focal plane" are defined.

d) Claim 4 is functional. The claim recites functional language thereof " a beam splitter... one another" (lines 1-5) without reciting sufficient structure to warrant the presence of functional language. In other words, it is unclear how a beam-splitter of an interferometer for splitting an incident light beam into two individual beam paths can make the so-called "accumulated aberrations of the interferometer" opposite to one another. Further, the terms "of the of the" (lines 4-5) should be changed to --of the--.

e) Claim 5 is indefinite for the following reasons: First, the feature "the accumulated axial aberrations" (lines 2-3) lacks a proper antecedent basis; and Second, the feature thereof "the focal plane of the objectives" (line 5) is indefinite because it is unclear how a plurality of objectives can have only a focal plane as read from the mentioned feature.

f) Claim 7 is indefinite due to the claim language being inaccurate. In other words, what does applicant mean by "the correction consists essentially of image sharpness errors, image scale errors, chromatic aberrations, ... magnification errors" (lines 2-6). The Examiner is of opinion that another term "correction" should be added to each type/kind of error/aberration such as --image sharpness errors correction-- or --chromatic aberrations correction--, etc...

g) Claim 9 is indefinite for the similar reason as set forth in element a, the Second reason.

h) Claim 10 is indefinite because the feature "the axial direction" (line 2) lacks a proper antecedent basis.

i) Claim 15 is indefinite because the feature "the axial direction" (line 2) lacks a proper antecedent basis.

j) The remaining claims are dependent upon the rejected base claims and thus inherit the deficiencies thereof.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-2 and 7-13, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Hell (EP No. 491 289, submitted by applicant).

In columns 9-11 and fig. 3, Hell discloses a double confocal scanning microscope having an illuminating system defining an illuminating beam path from the illuminating system to a specimen, and a detecting system defining a detection beam path. There are two objectives disposed equally on both sides of a specimen wherein the light passing through one objective will focus into the specimen. At least one beam-splitter is used for splitting an incident light beam into two individual beam paths. It is also noted that there are other optical components including polarizations elements, mirrors, lenses disposed in the illuminating light path and detecting light path. The detecting system comprises a

detection pinhole which is symmetrically positioned in the detecting beam path. It is noted that the claims, in particular, claims 10-13, recite that the detecting pinhole is positionable, and the claims do not recite that the detection pinhole is movable along the detecting beam path. While Hell does not clearly state that the optical components used in his system is corrected for errors/aberrations; however, since any optical components process at least one type/kind of error/aberration correction, and the claims do not recite any specific aberrations as well as error/aberration correction; therefore, the optical components disclosed in the double scanning microscope of Hell inherently process such characteristics.

15. Claims 1-2, 4, and 6-13, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Schoppe (DE 39 18 412).

In columns 1-3 and fig. 1, Schoppe discloses a double confocal scanning microscope having an illuminating system defining an illuminating beam path from the illuminating system to a specimen, and a detecting system defining a detection beam path. There are two objectives disposed equally on both sides of a specimen wherein the light passing through one objective will focus into the specimen. A beam-splitter is used for splitting an incident light beam into two individual beam paths. It is also noted that there are other optical components including polarizations elements disposed in the illuminating light path and detecting light path. The detecting system comprises a detection pinhole which is symmetrically positioned in the detecting beam path. It is noted that the claims, in

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particular, claims 10-13, recite that the detecting pinhole is positionable, and the claims do not recite that the detection pinhole is movable along the detecting beam path. While Schoppe does not clearly state that the optical components used in his system is corrected for errors/aberrations; however, since any optical components process at least one type/kind of error/aberration correction, and the claims do not recite any specific aberrations as well as error/aberration correction; therefore, the optical components disclosed in the double scanning microscope of Schoppe inherently process such characteristics. It is also noted that since the optical path lengths from the beam-splitter to the specimen in each individual illuminating beam path are equal to each other; therefore, the aberrations are inherently made opposite to each other.

Conclusion

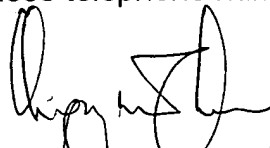
16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is 703 308 4814. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703 308 1687. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308 7724 for regular communications and 703 308 7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



Thong Q. Nguyen
Primary Examiner
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March 1, 2002